

**DETERMINING BUSINESS STRATEGY OF SEISMIC SURVEY VENDOR BASED ON  
COMPETITIVE ADVANTAGES: CASE STUDY ELNUSA GEOSCIENCE**

Dadang Soewargono, Kuntoro Mangkusubroto and Agung Wicaksono

School of Business and Management  
Institut Teknologi Bandung, Indonesia  
soewargono@sbm-itb.ac.id

**Abstract** – *Elnusa TBK is one of the biggest oil services in Indonesia established 42 years ago and now have three divisions : 1) Geoscience Services, 2) Drilling Services and 3) Oilfield Services. In the increasingly global competitive oil and gas services industry, company must choose to sharpen its business portfolio. Competition in the oil and gas services business is quite high, including the entry of several foreign players which forced Elnusa to improve its service and business strategy. This Final Project focus on Geoscience Services division which has the biggest revenue in Elnusa TBK. Currently Elnusa Geoscience cannot compete with competitors because its fixed cost cannot be reduced. Therefore, Elnusa Geoscience has to find a way the strategy to compete in this situation. This final project will explore business issues and analyze the factors in oil & gas services industry situation. Finally this final project provide several alternatives strategy recommendation and implementation plan..*

**Keywords** : *competitiveness, oil & gas service company, business strategy*

## **I INTRODUCTION**

Elnusa Geoscience is the only Indonesian national company that can provide integrated services in oil and gas exploration and production activities . Elnusa Geoscience providing services in geophysics, including consultation, survey, feasibility studies, technical planning, supervision and management.

Until year 2011 Elnusa Geoscience is the market leader for seismic industry in Indonesia, but then many company come to the competition. Elnusa Geoscience inevitably have to fit this condition with business strategy.

Basically business in geophysical aspect is investing a lot of amounts of money which we do not know how much or when we can sell this services.

Today, Elnusa cannot compete with competitor because their fixed cost cannot be reduce, therefore Elnusa have to find a way what strategy and how to compete in this situation.

In the era of globalization, every company must deal with every change that effect in its business strategy. Business competitiveness should be created with creativity which is difficult to copy by competitor. This is we can call business strategy.

This Final Project aims to assessments business strategy of Elnusa Geoscience in order to take possession of seismic excellent performance and the end provide best contribution costumer.

## **II Business Issue Exploration**

Elnusa Geoscience Providing services in geophysics, including consultation, survey, feasibility studies, technical planning, supervision and management. Business in geophysical operation need invest significant amount, because they need high technological equipment, high quality of employee and the nature of Geoscience business subjects is to significant ongoing operating risks.

Supply chain in Geoscience is a complex network of internal and external organizations, manufacture and logistics supporting products and

services around the world. They are vulnerable to disruptions in this supply chain from changes in government regulations, tax and currency changes, strikes, boycotts and other disruptive events as well as from unavailability of critical resources. These disruptions may have an adverse impact on ability to deliver products and services to customers

### **Business Issue Faced**

Constraints on seismic survey operations can be categorized into 3 parts :

**Pre Operation** Licensing, is a process must be taken when we will the start operations. Permit must be obtained from province, regency, minister and also from plantation or mining companies if the line of survey through their area.

To obtain this permit, takes a long time and almost in every regency have different treatment.

Equipment and human resources, a limited of equipment and others resources which is available in the market, effect seismic operation delay.

**Operation** Implementation of Safety standard. The characteristic of seismic survey is in the rural area with involve a lot of unskilled employee, which is effect high risk in operation.

Technical. Technical problem is on the drilling department, when rock layer difficult to drill, and also when recording begin unexpected noise effect a bad quality of data.

Social issue. This problem almost as long as operation be held. The local community often do not support this exploration.

**Post Operation** Damage claim. Communities always claim unrealistic compensation Community development. Claim for community development frequently unrealistic and if the company not obey the community will hold up the operation.

Currently Elnusa Geoscience is market leader for Indoneisa seismic services, but today, Elnusa Geoscience compete with large, international companies as well as smaller, local companies. In addition, they compete with major service providers. There is five (5) major vendor of seismic survey, some of vendor operate more crews and they greater financial and resources in the world.

The following list of competitors firms :

**BGP**<sup>1</sup> BGP is one of the world's leading geophysical service companies, delivering a wide range of technologies, services and equipment to the oil and gas industry worldwide. They are engaged in seismic data acquisition, processing, interpretation, reservoir geophysics, borehole seismic, micro-seismic, GME and multi-client surveys, equipment manufacturing and software R&D. At present, BGP has 65 land crews and 6 seismic vessels operating overseas. Forty seven overseas branches and offices have been established in Asia, America, Africa and the Middle East. Address : P.O.Box 11, Zhuozhou Hebei, 072751 P.R.China

**Daqing Citra Petroleum Services**<sup>2</sup> Daqing Citra PTS. are branch companies of Daqing Petroleum Administrative Bureau (DPAB) which is the largest petroleum technology services company in China. DCPTS & DJPE engage in geophysical exploration (seismic) services, well logging, drilling, cementing, oilfield construction and sale petroleum equipment & petrochemical products in Indonesia.

**Geokinetics**<sup>3</sup> Geokinetics is one of the largest independent, international land and shallow water geophysical service companies offering a broad range of specialized geophysical solutions to the petroleum and mining industries, worldwide. Geokinetics is an industry leader with a capacity of over 30 acquisition crews, 200,000 channels, 5 data processing centers around the world and 10,443\* square miles of multi-client data. Our clients include independent, international, and national oil companies. Geokinetics is headquartered in Houston, Texas and is listed on the New York Stock Exchange (NYSE Amex:GOK).

**Fairfield Indonesia**<sup>4</sup> Headquartered in Sugar Land, Texas, FairfieldNodal offers a full spectrum of ZNodal seismic equipment and services to meet all your acquisition and processing challenges: They design, manufacture and sell ZNodal seismic

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<sup>1</sup> [www.bgp.com](http://www.bgp.com)

<sup>2</sup> [www.daqing.co.id](http://www.daqing.co.id)

<sup>3</sup> [www.geokinetics.com](http://www.geokinetics.com)

<sup>4</sup>

[www.fairfieldnodal.com/Services/Data%20Processing/Locations/Jakarta/index.html](http://www.fairfieldnodal.com/Services/Data%20Processing/Locations/Jakarta/index.html)

recording systems, featuring our true cable-free nodes, for any land or marine project. Their crews use ZNodal seismic nodes to acquire wide-azimuth, 4D and full-azimuth marine seismic data, even in the world's most difficult situations. FairfieldNodal owns the industry's premier 3D multi-client seismic database covering 2,700+ blocks of the Gulf of Mexico Shelf. FairfieldNodal operates four full-service seismic data processing centers where experts using advanced hardware and software provide cost-effective supercomputing on large-scale projects. They offer a complete range of sophisticated imaging and noise-suppression technologies, and invest in continuous research and development.

**WesternGeco**<sup>5</sup> WesternGeco is the world's leading geophysical services company, providing comprehensive worldwide reservoir imaging, monitoring, and development services. Our geophysical data acquisition crews and Geo Solutions centers are spread across the globe and we offer our clients the industry's most extensive multi client data library. Our services and products supply our clients with increasingly accurate measurements and images of subsurface geology and rock properties. Address : Buckingham Gate, Gatwick Airport West Sussex RH6 0NZ - United Kingdom

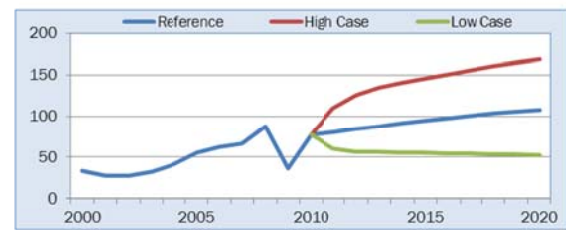
NO	Company	Country of Origin
1	Elnusa	Indonesia
2	BGP	China
3	Daqing Citra PTS.	China
4	Geokinetics	Houston
5	Fairfield	Texas
6	WesternGeco	United Kingdom

Figure 1. : Seismic Vendor by Country of Origin<sup>6</sup>

In the era global will increased competition, therefore require new business strategy to increase competitiveness to survive in this era of globalization.

Elnusa Geoscience is the first Indonesia company that has had much experience to doing seismic survey in Indonesia area. Base on project seismic acquisition land on 2011, Elnusa Geoscience has completed in South Sumatra, West Java, North

Sumatra with 100% completion on time delivery, otherwise some vendor unfinished their contract in West Madura, North Sumatra, and Kalimantan.



Source : EIA, Barclay Capital

Figure 2: Oil Price Movement

Source : EIA, Barclay Capital

### III . ANALYSIS & DISCUSSION

**External Environment Analysis :** Organizational environment consists of both external and internal factors. Environment must be scanned so as to determine development and forecasts of factors that will influence organizational success. Environmental scanning refers to possession and utilization of information about occasions, patterns, trends, and relationships within an organization's internal and external environment. It helps the managers to decide the future path of the organization. Scanning must identify the threats and opportunities existing in the environment. While strategy formulation, an organization must take advantage of the opportunities and minimize the threats. A threat for one organization may be an opportunity for another.

**Political Operations** are subject to a variety of federal, provincial, state, foreign and local laws and regulations, including environmental, health and safety and labor laws. They invest financial and managerial resources to comply with these laws and related permit requirements. Failure to do so could result in fines or penalties, enforcement actions, claims for personal injury or property damages, or obligations to investigate and/or remediate contamination. Failure to obtain the required permits on a timely basis may also prevent them from operating in some cases, resulting in crew downtime and operating losses. Moreover, if applicable laws and regulations, including environmental, health and safety requirements, or the interpretation or enforcement thereof, become more stringent in the future, they could incur capital or operating costs beyond those

<sup>5</sup>[http:// www.slb.com](http://www.slb.com)

<sup>6</sup> Collecting data from internet

currently anticipated. The adoption of laws and regulations that directly or indirectly curtail exploration by oil and gas companies could also materially adversely affect operations by reducing the demand for geophysical products and services.

**Economic** Global market and economic conditions are uncertain and volatile. In the past, economic contractions and uncertainty have weakened demand and lowered prices for oil and natural gas, resulting in a reduction in the levels of exploration for hydrocarbons and demand for Geoscience Service Division products and services.

Uncertainty about the global economy has had and is likely to continue to have a significant adverse impact on commercial performance and financial condition of many oil companies, which may affect to customers and suppliers. The current economic climate may lead customers to cancel or delay orders or leave suppliers unable to provide goods and services as agreed.

Oil price movement represent Trend of oil price increasingly in the last 10 years while gas prices are quite volatile. Based on survey from Barclays Capital, Capex Oil Company will increase if oil prices above \$ 90 and will reduce capex if prices below USD 60

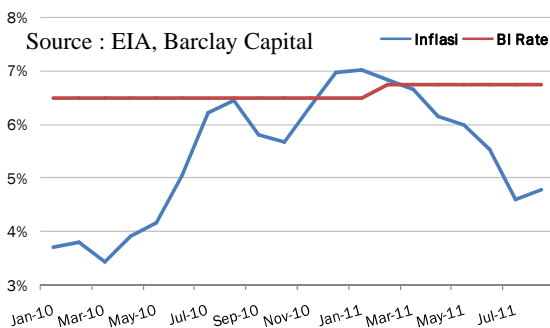


Figure 3 : Indonesia economic VS Inflation rate

Indonesia's economic growth of 6-7% is still higher than the average world growth economy

**Social** Seismic data acquisition activities, particularly in remote areas, are often conducted under harsh weather and other hazardous operating conditions. These operations are subject to risks of loss to property and injury to personnel from fires, accidental explosions and natural disasters.

They produce and sell highly complex products and cannot assure that all product manufacturing controls and testing will be adequate and sufficient to detect all defects, errors, failures, and quality issues that could affect customers and result in claims against or result in order cancellations or delays in market acceptance.

Whenever possible, they obtain agreements from customers that limit liability. However, they cannot assure to fully cover in all circumstances or against all hazards.

**Technological** Technology changes rapidly in the seismic industry, and new and enhanced products are frequently introduced in the market for Geoscience products and services, particularly in equipment manufacturing and data processing and Geoscience sectors. Key success depends to a significant extent upon ability to enhanced products and services on a cost-effective and timely basis in accordance with industry demands.. New and enhanced products and services, if introduced, may not gain market acceptance and may be materially adversely affected by technological changes or product or service introductions by competitors.

## FIVE FORCES

**Threat of New Entrants:** Threat of new entrants depends on how high barriers to entry this industry. In geophysical business, the main difficulty is in terms of having personnel who have special experience in areas of Indonesia. Equipment and technology can be bought but experience cannot be purchased.

Company may have a lot of resources, but if they could not complete the project properly this is a bad precedent for the costumer. we can categorize this threat MEDIUM.

**Threat of Substitutes :** Main product on geophysical business is a unique product (seismic data and seismic processing), therefore in this geophysical business cannot be substitute by competitor.

This services highly dependent on time delivery, therefore the availability of personnel and equipment very important. As the time costumer need seismic service but there is not available product or service therefore the costumer must

wait and cannot be change to other product or services. We can categorize this threat LOW.

**Bargaining Power of Suppliers :** Suppliers in this business quite dominant, because both equipment and employee have typical characteristic.

For example, the main products in this work is a recording instrument which we call sercel derived from the French, while other products cannot be sold in the market. this has resulted in dependence on suppliers sercel is very high.

Labor suppliers with a good ability in dealing with geophysical business problem still very rare. Sometime Elnusa Geoscience should terminate sub-contractor/supplier which cannot meet the required standards.

Manpower is Indonesian people who have low educational level only can be done by an experienced person. We can categorize this forces HIGH.

**Bargaining Power of Buyers :** The bargaining power of customers is also described as the market of outputs: the ability of customers to put the firm under pressure, which also affects the customer's sensitivity to change company. For example when personnel or equipment are not available, then the customer will immediately move on to other company.

The characteristics of employees in geophysical business is very specific, therefore the customer easily move the work to companies which is ready. We can categorize this forces HIGH.

**Intensity of Rivalry :** Intensity of competition in this business is very high, day to day more and more qualified company with good quality and competitive prize. As well as the exit barrier is very high because the company already invest a lot of money. Today, competitiveness in geophysical services company is in low cost leadership. We can categorize this forces HIGH

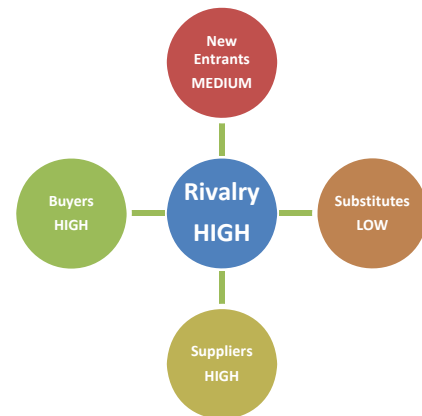


Figure 4 : Five Force Conclusion

### Internal Environment Analysis

**Valuable** The most valuable aspect in Elnusa Geoscience is their experience in completing projects in Indonesia area. It is supported because Elnusa Geoscience has employees who are experienced in resolving the various issues raised in Indonesia area. Senior employee who is now level manager deeply understand how to support and conduct management of the problems solution.

Relationship with local government has been very well maintained, especially for regions where are conflict areas.

Therefore Elnusa Geoscience can provide one stop services to the client, make suggestions, communicate what problems to be faced.

**Rare** After deciding what is valuable to Elnusa Geoscience, now we need to decide what aspects are rare. Rare aspect of Elnusa Geoscience is in the employee which are heterogeneous culture. Almost all areas in Indonesia have been represented by an employee of Elnusa Geoscience. This is the uniqueness of Elnusa Geoscience therefore rarely possessed by similar companies. Of course this employee has certainly experienced and how to solve geophysical problems in Indonesia. Unfortunately the heterogenic cannot be sustained, because qualified employees left Elnusa Geoscience.

**Inimitable** According to the I (Inimitable) of the VRINE model, Elnusa Geoscience is a one stop services in geophysical business, they will provide

integrated services such as initial project risk management.

Unfortunately the quality of these integrated services unsystematic, depending on who is doing this service. Elnusa Geoscience has no standard method to provide integrated services.

**No-substitutable** According to the N (No-substitutable) of the VRINE model, Elnusa Geoscience experience has no substitutable, experience is the best lesson to the company. There is no company in Indonesia that experience beyond the experience of Elnusa Geoscience.

Unfortunately they experience is not well documented in the system. Problems are often repeated and Elnusa Geoscience often make the same mistake. Elnusa Geoscience have not a knowledge management.

**Exploitable** The E in the VRINE model stands for exploitable. Elnusa Geoscience product can still be used in geophysics business. One reason is because Elnusa Geoscineces have a competitive advantages although they do not realize what strengths and how to maximize its competitive advantages. We all know that to enhance and realize competitive advantages is not an easy matter.

### Seismic Vendor Analysis

Elnusa Geoscience is a market leader, but the other try to catch the market

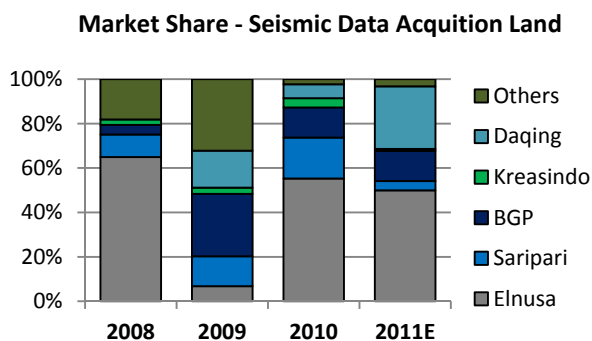


Figure 5 : Market Share Seismic Data Acquisition Land<sup>7</sup>

Market share in seismic data Acquisition Land from the years 2008 to 2011 fluctuated although generally still dominated by Elnusa. In year 2009

<sup>7</sup> Elnusa internal data

Elnusa Geoscience revenue decreased due to a carry over from 2008.

Daqing, BGP and Saripari are foreign companies whose owned shares by china. Closest competitor is Daqing because most employee in Daqing are former employees of Elnusa Geoscience, whereas one of requirements of the costumer is the availability of local labor.

In this business unit we can analysis that other vendors will compete by adopt senior employee of Elnusa Geoscience. Competitor's strategy will quickly adopt experience from senior employee

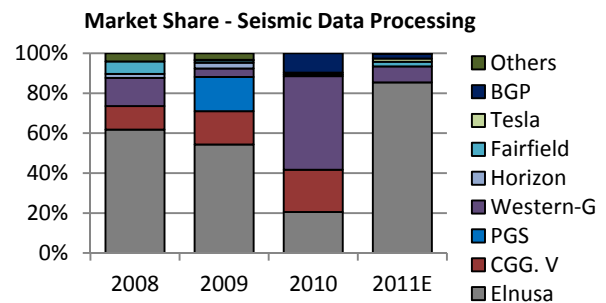


Figure 6 : Market Share Seismic Data Processing<sup>8</sup>

Basically vendor of seismic processing still dominated from foreign company. However an expert geoscientist needs experience of geophysical sub surface. Therefore seismic data processing in Indonesia is dominated by Elnusa Geoscience because all employees are Indonesian experienced.

In business seismic data processing, require senior employee, because one of the costumer requirement is high qualified experiences employee.

Competition in Seismic business is quite high, small player which have adequate equipment will potentially price war, moreover the new entry player from China have more completely equipment with inexpensive technology. The Company compete with the technology and the capacity of equipment, some of the multinational company will reduce their price as low as they can.

<sup>8</sup> Elnusa internal data



Vendor strategies very aggressive to approach oil company and preparing all equipment and technology to deal with customer need.

### **Core Competencies**

Core competence Elnusa Geoscience can be identify with three aspect :

**Provides potential access to a wide variety of markets :** Elnusa Geoscience have biggest and completed employee with high experience and it can be contribute to wide market. Elnusa Geoscience have a lot of material and software, so they can run parallel project as oil company requested. Elnusa Geoscience have a lot certificate of HSE and the employee already have certificate that needed costumer.

**Makes a significant contribution to the perceived customer benefits of the end product :** Elnusa Geoscience can be as an adviser to costumer about risk and technology which costumer will use. Elnusa Geoscience have integrated oil service company, and it can add costumer benefits.

**Difficult for competitors to imitate** Elnusa Geoscience is the oldest company in Indonesia, they have access to official government in its very helpful in solving problem. Elnusa Geoscience is the first player in geophysical business, they have employee spread along Indonesia, they can mitigation the risk in every area.

### **Strategy at Business Level**

After several external analysis, internal analysis, competitor analysis and core competencies, concluding that competition in geophysical business quite high. The new entrants have to work hard in order to compete Elnusa Geoscience. The easy way is they offering low prices.

Elnusa Geoscience which high cost of good sales should compete due focus on differentiation where Value is provided to customers through unique features and characteristics of an organization's products rather than by the lowest price. Although Elnusa Geoscience have a lot of experiences, they should have a database in mapping risk and potential problem in all area survey that they already done.

In this global competitiveness, Elnusa Geoscience should maintain and increase the key employee, especially for government relationship and should maximizing support operation function and improve the competence of health and safety. Finally Elnusa Geoscience should commit and **focus differentiation** service product differentiation.

## **IV IMPLEMENTATION**

Coming from competitive advantages of Elnusa Geoscience, implementation plan is the final step for every business plan strategy, the business plan strategy will need a very strong support and focus to reach the goal. The support we are talking about is not only about a skill planner but also top management support and commit.

Following the implementation plan to enhance competitive advantages of Elnusa Geoscience to deal with current condition. :

### **Development Employee Competencies**

Base on advantages of Elnusa Geoscience, the competitiveness come from human resources, therefore firstly we have to mapping key personnel and classification competencies each employee, than standardize and improve the competencies of each employee through a planned program accordance with the requirements of oil company and challenges in the competition in global business of Geoscience.

The role of HR function very important to synergize business strategy to improve competitive advantages.

### **Retaining Employee**

At this stage HR role is still needed thus formed with a clear job structure and pay structure, career management and development. Obviously a lot of approach programs on human resources management that could program managing turnover.

This HR programs should support business strategy Elnusa Geoscience to be more competitive in the global competitives

### **Improve safety program**

Currently policies on safety in Indonesia oil and gas industry getting better, punishment against the environmental impact and safety issued result in a

safety program part of a business that cannot be ignored.

Characteristics of the seismic survey which involving a lot of unskilled employee, natural hazard and lack of equipment become high potential risk where have to be minimize. Safety culture program to all employee must be carried out in earnest. Contractor system management safety need to be taken seriously therefore can reduce safety risk which impact on overall business Geoscience

#### **Competing Through Technology**

This strategy involves collecting information and providing data about current condition in some seismic area base on Elnusa experiences. This technology is an interactive web base which easy to access by field party manager so that every field activity can online update automatically the current issue

This data will be used by assessment centre to evaluate risk and then create program and plan how to operate this operation in field

#### **Integrated Services**

With a very diverse human resources it is possible for Elnusa Geoscience to increase the services as integrated. The constraints in pre operation, on operation and post operation must be a challenge

to develop strategy business into competitive advantages which became an strong character in distinguishing between Elnusa Geoscience with other competitors

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